

1852

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TECHNICAL NOTES
of the
ALASKA FOREST RESEARCH CENTER
U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

JUNEAU, ALASKA

No. 1First Records of Growth for Southeast Alaska's Young Stands

The first figures based on actual growth of young stands in Alaska were obtained by remeasuring 25 sample plots established 20 years ago. The growth data obtained confirm the need for cutting the old climax forest which is estimated to average only 4,000 merchantable cubic feet per acre. The second-growth which would replace it after logging, even though averaging 85 percent of the approximate "normal" stocking of these plots would, on an average site, produce more than double this volume per acre at 80 to 100 years of age.

The yield tables for Southeast Alaska published in 1934 ^{1/} indicated that this would be so. The table on the following page shows the growth actually made over a 20-year period on 25 of the original 288 sample plots used for the yield table. This check was not intended as a test of the accuracy of the yield tables, but more as a general confirmation of expected yields. With the pulp industry about to begin operations in Alaska it is necessary to be fairly sure that no mistake of any magnitude was made in growth potentials computed 20 years ago.

The yield tables are counted on only for an approximate estimate. More precise methods will be used in following the development of new stands that regenerate after pulptimber cutting. It is evident from the accompanying figures that the tables will not lead us too far astray in obtaining rough approximations of future yields.

^{1/} Yield of second-growth western hemlock-Sitka spruce stands in Southeastern Alaska. U. S. Dept. Agr. Tech. Bull. 412. March 1934.

Twenty Year Growth Record for 25 Plots^{1/}

| Location | Plot No. | Age in 1948 | D.B.H. of average tree in inches | | Actual volumes per acre | | Predicted volumes per acre | Difference | Actual growth per acre-year |
|----------------------|----------|-------------|----------------------------------|------|-------------------------|--------|----------------------------|------------|-----------------------------|
| | | years | 1928 | 1948 | 1928 | 1948 | 1948 | % | 20 years |
| Tuxekan Id. | 6 | 77 | 4.6 | 6.0 | 1,895 | 3,343 | 3,989 | +16.2 | 72 |
| Taku Harbor | 3 | 120 | 6.2 | 7.4 | 2,979 | 6,768 | 6,029 | -12.2 | 189 |
| Thorne Id. | 3 | 92 | 5.9 | 7.5 | 5,745 | 7,577 | 6,570 | -15.3 | 92 |
| Lagoon Bay | 2 | 98 | 6.3 | 8.0 | 4,363 | 6,435 | 6,423 | — | 104 |
| Lagoon Bay | 3 | 98 | 6.4 | 8.13 | 3,746 | 5,324 | 6,294 | +15.4 | 79 |
| Thorne Id. | 2 | 92 | 6.4 | 8.15 | 5,448 | 7,913 | 6,923 | -14.3 | 123 |
| McKenzie (2) | 1 | 79 | 6.5 | 8.72 | 6,413 | 9,760 | 7,980 | -22.3 | 167 |
| Lagoon Bay | 7 | 98 | 7.5 | 9.55 | 7,089 | 9,206 | 8,100 | -13.6 | 106 |
| Old Kasaan | 4 | 90 | 8.2 | 10.6 | 6,633 | 9,113 | 8,912 | - 2.2 | 124 |
| Taku Harbor | 5 | 120 | 8.8 | 10.7 | 6,162 | 8,241 | 8,460 | + 2.6 | 104 |
| Lagoon Bay | 10 | 98 | 9.0 | 11.2 | 8,470 | 10,655 | 10,340 | - 3.0 | 109 |
| Lagoon Bay | 5 | 98 | 8.8 | 11.2 | 6,934 | 10,241 | 10,442 | + 2.0 | 165 |
| Whitewater B. (P.P.) | 65 | | 7.9 | 11.5 | 7,852 | 9,993 | 11,858 | +15.7 | 107 |
| Windfall H. | 9 | 82 | 9.4 | 12.5 | 7,437 | 10,134 | 11,550 | +12.2 | 135 |
| Kasaan Bay (2) | 2 | 94 | 10.3 | 13.1 | 10,005 | 11,722 | 12,160 | + 3.6 | 85 |
| Kasaan Bay (1) | 3 | 94 | 11.1 | 13.6 | 8,727 | 12,091 | 12,600 | + 4.0 | 168 |
| Tuxekan Pass (P.P.) | 82 | | 10.3 | 13.7 | 10,924 | 14,898 | 15,611 | + 4.6 | 199 |
| El Capitan | 1 | 85 | 11.2 | 14.5 | 8,960 | 10,588 | 13,886 | +23.7 | 81 |
| El Capitan | 2 | 85 | 11.0 | 14.5 | 8,373 | 10,248 | 14,840 | +30.9 | 94 |
| Kasaan Bay (1) | 4 | 94 | 11.7 | 14.9 | 10,519 | 13,688 | 15,632 | +12.4 | 158 |
| Kasaan Bay (P.P.) | 94 | | 11.8 | 15.0 | 13,647 | 15,240 | 17,491 | +12.8 | 80 |
| Kasaan Bay (1) | 2 | 94 | 12.4 | 15.7 | 11,163 | 12,185 | 15,420 | +21.0 | 51 |
| Polk Inlet | 4 | 170 | 14.5 | 16.3 | 11,897 | 15,010 | 16,170 | + 7.2 | 156 |
| Tuxekan (1) | 2 | 143 | 14.1 | 16.5 | 15,747 | 19,055 | 18,942 | - 0.1 | 165 |
| Tuxekan Id.(3) | 7 | 143 | 20.8 | 24.5 | 18,492 | 23,477 | 24,300 | + 3.3 | 249 |

Averages 99.4 10.2 12.6 8,385 10,916 11,637 10.8 126

Standard error of estimate of volumes per acre + 13.5%

Aggregate difference 6.19% less than predicted.

^{1/} All volumes in merchantable cubic feet (trees 7 inches d.b.h. and larger, to a 6-inch top).